

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

A 64.9
F31

Sta

NEW CROP VARIETIES

No. 10 — Summer 1968

USDA
NATL. EXT. SERV. LIBRARY

31.00

U.S. DEPT. OF AGRICULTURE
WASHINGTON, D.C. 20250

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL EXTENSION SERVICE
WASHINGTON D.C. 20250

Described here are new varieties of certain field crops. The purpose of this annual summary is to provide the extension worker with reference information attuned to his requirements.

Assembled by the Federal Extension Service with the cooperation of State Extension Agronomists and the Agricultural Research Service--USDA

ASTM 217 (10-68)

Varieties Described

WHEAT - p. 1

Adams
Agent
Arthur
Benhur
BWH 1904-7
Crest
Logan
Polk
Red River 68
Shawnee
Timwin
Trader
Trapper
Yorkstar

OATS - p. 6

Compact
Coronado
Dade
Hickory
Florida 501
Forager
Montezuma
Multiline M-68
Multiline E-68
Pennlan
Pettis

BARLEY - p. 9

Arimar
Briggs
Cass
CM-67
Florida 102
Hanover
Hembar
Ione
Keowee
Lakeland
McNair 601
Newmar
Stevland

COTTON - p. 13

Acala 3080
Atlas 67
Coker 413-68
MO-DEL
Stoneville 508
Tamucot 788
TH 149

SOYBEANS - p. 16

Beeson
Calland
Clay
Cutler
Lee 68

SAFFLOWER - p. 17

Dart
Rio

FLAX - p. 18

Nored

CRAMBE - p. 19

Prophet

POPCORN - p. 19

P-216

BROOMCORN - p. 19

Deer
Plains 1
Plains 2

FIELD BEANS - p. 20

Royal Red

SUGARCANE - p. 21

CP 56-63
CP 57-614
CP 63-588
CP 67-500

SORGHUM (SIRUP) - p. 22

Brandes

ALFALFA - p. 22

A-24
Florida 66
Iroquois
Mesilla
Unico
WL 210
WL 214
WL 303
123
153

BERMUDAGRASS - p. 25

Pee Dee 102

BROMEGRASS - p. 25

Fox

ORCHARDGRASS - p. 26

Palestine
Pennmead

RED FESCUE - p. 26

Jamestown

WHEATGRASS - p. 27

Tegmar

Inquiry about any variety described here should be directed to the State or producer releasing it.

Wheat

Adams (C.I. 13722) is a bearded, white spring wheat developed jointly by the Oregon AES and USDA, that appears to be suitable for both dryland and irrigated conditions. The straw is medium in height and moderately stiff. It heads about midway between Idaed 59 and Federation. In test weight, the grain approximates Idaed 59. Adams seems quite tolerant to stripe rust even though the disease readily infects the variety. In a 1963 test, when a severe stripe rust epidemic reduced the yield of Federation to 22.8 bushels, Adams yielded 74.2 bushels. The new variety is highly resistant to most races of common bunt. It is expected to displace Federation. Some 10,000 pounds of registered seed are available.

Agent is an Oklahoma release that features high forage yields and unusual leaf rust resistance. This latter trait is attributed to inclusion of a forage grass in the new variety's parentage. Its recommended use in Oklahoma is limited to the eastern and southern portions of the State where leaf rust is a problem and where winter pasture may be as important to the grower as a grain crop. For lack of winterhardiness along with its lower test weights and yields, Agent is not recommended in northwest Oklahoma. In 10 years of testing Kaw and Triumph have outyielded it 4 to 5 bushels. Certified seed is available.

Arthur (C.I. 14425) is a soft red winter wheat developed cooperatively by the Purdue AES and USDA. In addition to higher yields than other recent releases from the Purdue Station, Arthur offers shorter straw and greater resistance to stem rust and loose smut. It is resistant to races of powdery mildew that predominate in the region, moderately resistant to leaf rust and soil-borne mosaic and carries the H3 gene for Hessian fly resistance. The new variety is described as being equivalent to the best varieties in test weight, milling and baking qualities, and in winterhardiness. Breeders seed and foundation seed are available from, respectively, the Purdue Experiment Station and Indiana Agricultural Alumni Seed Improvement Association.

Wheat (cont.)

Benhur (C.I. 14054) is a short, early, soft red winter wheat that features high resistance to stem rust and loose smut; resistance to Hessian fly; and moderate resistance to powdery mildew and soil-borne mosaic. It was cooperatively developed by the Purdue AES and USDA.

In tests for 4 years at Lafayette and 2 years at 5 other Indiana locations, the new variety has approximately equalled the highest yielding commercial varieties. Its test weight frequently excelled that of Monon and Riley; its milling and baking qualities differ little if any from commercial varieties. Its straw strength was superior to that of Knox 62, Monon and Riley. Benhur appears slightly inferior in winterhardiness to Knox 62 and Riley. It is a white chaff, beardless variety. Some seasons Benhur shows a slight black striping typical of the brown necrosis associated with the Hope resistance to stem rust. But this causes no injury.

Inquiries on seed should be directed to the Purdue Station.

BWH 1904-7 (C.I. 13872) is a hard red winter wheat selected at the Montana AES from a bulk population. Its features are unusual winterhardiness and resistance to stem rust, including races 56 and 15 B-2. Expected to limit use of this variety is its comparatively lower yield under good environments when rust and winter injury are not problems. Plants are tall, heads awned and glumes are white.

Following is an 11 station-year summary:

	Yield	Test Weight	Spring Survival
Cheyenne	35.3	61.6	45
Winalta	34.0	62.3	47
BWH 1904-7	33.4	60.2	70

Foundation and breeder seed will be maintained by Montana AES and Foundation Seed Project.

Wheat (cont.)

Crest (C.I. 13880) is a brown chaff, early, hard red winter wheat developed at the Montana AES from the cross P.I. 178383 x Westmont², backcrossed and selected for disease resistance. It is resistant to stripe rust and prevalent races of dwarf bunt, including D-3. The new variety is 4 inches shorter than Cheyenne and 3-4 days earlier. Lack of winterhardiness is expected to be its limitation. Breeder and foundation seed will be maintained by Montana AES and Foundation Seed Project.

Following is a 15 location-year performance summary:

	Yield	TW	Heading Date	Height	% Stripe Rust Severity	% Dwarf Smut
Cheyenne	38.2	60.4	171	38	43	32
Delmar	40.9	59.1	173	37	22	9
Crest	43.2	60.4	167	33	2	1

Logan (C.I. 14156) is a soft red winter wheat developed by the Ohio Agricultural Research and Development Center. A selection from the cross Vermillion x Lucas, it possesses resistance to race A of Hessian fly, indicating an early outcross to an unknown resistant line. Early to midseason in maturity, it has white stiff straw, is short to midtall. Logan has moderate resistance to local races of leaf rust and to loose smut, but is susceptible to mildew and stem rust. It has excellent winterhardiness. In extensive state-wide drill plot trials, Logan outyielded Reed, the next highest variety, by over 6 percent. It is adapted to the same areas as Reed and Monon. Test weight of Logan is medium; its milling and baking qualities equal to those of currently grown varieties. Foundation seed is being distributed.

Polk (C.I. 13773) is a hard red spring wheat developed by the Minnesota AES and USDA, and released by the experiment stations of Minnesota, Montana, North Dakota and South Dakota. It is a bearded wheat of medium height and maturity, and moderately stiff straw. Polk wheat is more resistant than Chris to common types of stem and leaf rust. It is resistant to black chaff and bunt. Test weight is one of its outstanding characteristics, excelling Chris by some three percent. Yield differences for these two were slight but have tended to favor Polk. Milling and baking qualities are satisfactory. Breeder seed is being maintained by the Minnesota Experiment Station; all stations releasing the new variety are distributing foundation seed to certified seed growers.

Wheat (cont.)

Red River 68 is a semi-dwarf, hard red spring wheat released by World Seeds, Inc., and characterized by early maturity and high yields. "Important problems encountered in broad scale industry tests", according to the Crop Quality Council are "a substantial reduction in production of bakery flours and an excessively long mixing requirement."

Shawnee is a hard red winter wheat developed by Kansas AES and USDA. It is an increase of one of the 41 brown-chaffed lines bulked to originate Ottawa, the variety Shawnee is expected to displace. (See Recent Releases of New Varieties, No. 3, 1961.) Equal or better in yield than Ottawa, Shawnee is described as offering the best combination of quality, straw strength, and resistance to soil-borne mosaic and Hessian fly that is available to Kansas growers. It is susceptible to streak mosaic, stinking smut, loose smut and some rust races now present. The new variety is about a day later than Ottawa and an inch taller. Its test weight and winter survival are good.

Some 1400 bushels of seed were distributed to certified seed growers last fall.

Timwin (C.I. 13787) is a soft winter wheat developed by Wisconsin AES and USDA. It has red grain, white chaff, awns and short straw. It is moderately resistant to lodging. Timwin ripens about three days earlier than Racine. It is less winterhardy than Blackhawk or Racine but has outyielded the latter in Wisconsin tests where winterkilling was not a factor. The new variety has fairly high resistance to the leaf and stem rusts and is resistant to bunt. It is susceptible to loose smut. In milling and baking characteristics Timwin resembles Knox, though the grains are less plump.

Timwin readily undergoes natural crossing; e.g. with seed grown near taller varieties, tall plants will appear. Wisconsin Experiment Station is maintaining foundation and breeder seed.

Wheat (cont.)

Trader (C.I. 3998) and Trapper (C.I. 3999) are stem rust-resistant varieties of hard red winter wheat developed cooperatively by the Nebraska AES and USDA and released by the Colorado and Nebraska stations. They are sister selections from the cross Warrior x Selkirk-Cheyenne. Both new varieties have excellent quality. Commercial mill and bakery collaborators have rated them satisfactory.

Trader is a midseason variety that combines productiveness, quality and stem rust resistance. It is similar to Warrior in yield, winterhardiness and straw strength. Trader is slightly taller and later than Warrior, but superior in test weight and stem rust resistance. It is susceptible to leaf rust, bunt, wheat streak and soil-borne mosaic.

Trapper resembles Trader in most agronomic and quality characteristics. However, Trapper appears to be the more winterhardy and thus is preferred in the more northern wheat areas of western Nebraska.

Ample stocks of registered seed are expected for 1968 planting.

Yorkstar (C.I. 14026) is a soft white winter wheat of medium height developed at the Cornell AES and tested in USDA trials. It is adapted to the soft white wheat region of New York, Michigan and Ontario. The new variety is a selection from a series of three backcrosses to Genesee after an original cross of Yorkwin x (Brevor X Norin 10). Its outstanding features are: higher yield (9 percent above Genesee), shorter height (7 inches below Genesee,) and superior quality (one percent lower protein and finer flour granulation). Though lower in test weight than present varieties, the flour yield is as high. Varieties Yorkstar is expected to replace are Genesee and Avon. Certified seed is available.

Oats

Compact (C.I. 8280, Ky. 64-10653), a development of the Kentucky AES, is a winter oat variety that combines excellent lodging resistance and high test weight with good winter survival and high yield. In Kentucky trials, Compact has been shorter than Norline, superior in lodging resistance, higher in yield and test weight, equal in winter survival, and 2 days later in heading. Compact has a semi-compressed panicle with short straw, hence the name. Like most hardy winter oat varieties Compact is susceptible to most races of rusts and smuts. Breeder's seed will be maintained by the Kentucky Agricultural Experiment Station.

Coronado is a winter oat with superior crown rust resistance and yielding ability, developed cooperatively by the Texas AES and USDA. It is adapted to south Texas and adjoining Gulf Coast areas. Coronado is taller than most Texas varieties but with good straw strength, it resists lodging. In forage production Coronado equals other varieties. The kernels are plump and attractive. Maturity of the new variety is about the same as for Ora (see New Crop Varieties, 1964); earlier than Nortex, later than Houston or Suregrain. In winterhardiness it compares with Alamo-X and Moregrain. Foundation seed was distributed in the fall of 1968 by Foundation Seed Section, Texas A&M University, College Station, Texas 77803.

Dade and Hickory are winter oats cooperatively released in limited quantity to breeders only by Missouri AES and USDA. Their principal feature is increased winterhardiness. Yields are equal or slightly superior to Dubois and Norline in northern reaches of the winter oat area, but the straw is taller and more susceptible to lodging. The new strains are susceptible to smut and rust. For these reasons release to farmers is being delayed. Limited quantities of foundation seed are available to bona fide breeders from the Department of Field Crops, University of Missouri, Columbia, Mo. 65202.

Florida 501 (C.I. 8226), a winter oat developed cooperatively by Florida AES and USDA, is a superior selection from the same cross that produced Florida 500. In 7 station-year tests in Florida the new variety outyielded Florida 500 by 73 bushels to 65, and excelled in test weight in the 5 recorded test-years by 2.2 pounds. A top yielder in the Uniform Southern Winter Oat Nursery, it appears to be better adapted east of the Mississippi River. Observation and clipping tests in Florida indicate the new variety produces as much forage as other varieties, and at an earlier date.

Oats (cont.)

Florida 501 is some 2 inches shorter than Suregrain or Florida 500, intermediate to upright in growth habit, medium early in heading and slightly less cold-hardy than Suregrain. Kernels are plump. It is highly resistant to prevalent races of crown rust, and tolerant to soil-borne virus and leaf blotch. Though tolerant to a few races of stem rust, Florida 501 is susceptible to most races of this disease and to mildew.

Foundation seed is available.

Forager is a rank growing winter oat developed by the Mississippi AES and USDA and released actually, in 1964. However, because of limited seed supplies its use has been confined. In Mississippi tests Forager outstripped other varieties in total forage production but was excelled in grain yields. The level of grain yields has been associated with Forager's lateness in maturity and the subsequent hazards of heat, moisture and disease--notably leaf blotch. The variety is resistant to Victoria blight, many races of smut and leaf rust and to soil borne mosaic. It is susceptible to stem rust and to BYDV.

Montezuma, CAS 5022, is a red spring oat developed jointly by California AES and USDA. Of interesting origin, Montezuma was the best of 88 selections from a bulk of crosses with *A. fatua* (forms resembling wild oats) grown in 1965. Its large red kernels and similarity to Kanota in growth and seed quality inspired a rapidly expanded testing program. Related to Sierra, Montezuma is 8 to 15 days earlier in heading, approximately equal in lodging, about mid-height between Curt and Sierra, and more resistant to shattering. Montezuma also is more tolerant of flooding or extreme soil saturation, from 2-8 pounds heavier in test weight, less subject to mildew, more resistant to stem rust, and is not as coarse in appearance as Sierra. Against this combination of traits, the new variety showed one noted weakness in 1967. It harbored greater aphid reproduction in May, after aphids normally are eliminated by predators. Its reaction to BYDV is satisfactory.

Certified seed will be available in 1970.

Oats (cont.)

Multiline M68 (C.I. 8346) and Multiline E68 (C.I. 8345) are recent releases of the Iowa AES and USDA. Both are composites involving isogenic lines of different recurrent parentages. The recurrent parent of M68 has the A and B genes for stem rust resistance and the Landhafer gene for resistance to crown rust; that of E68 offers the B gene for stem rust resistance and the Garry gene for crown rust.

Multiline M68 is midseason in maturity, medium in height, and produces medium size, yellow seeds. Multiline E68 is very early, short, and produces large, plump, ivory colored seeds with a bronze basal tip. Both strains carry A and B genes for resistance to stem rust races 6, 7, 7A and 8 but not to the new biotypes 6AF and 6AFH. Both multilines are heterogeneous to crown rust.

Release of the multilines is expected to provide more lasting resistance to crown rust and to delay onset of rust epidemics. Foundation seed is available. Inquiries should be directed to Dr. C. D. Hutchcroft, Agronomy Department, Iowa State University, Ames, Iowa 50010.

Pennlan is a medium to early winter oat developed by Pennsylvania AES and USDA, suited to south-central and southeastern Pennsylvania. About a week earlier than Norline, the two varieties are considered equal in yield, lodging resistance, and winter survival. In height, Pennlan is about 3 inches the shorter of the two and tends to droop at maturity. Its kernels are yellow to yellowish white.

The source of breeder seed is the Pennsylvania Agricultural Experiment Station, University Park, Pa. 16802. Foundation seed is available from the Pennsylvania Foundation Seed Cooperative, Jersey Shore, Pa. 17740.

Pettis is an early, red spring oat developed cooperatively by the Missouri AES and USDA. Similar in maturity to Mo. 0-205, Andrew, Nodaway and Jaycee, Pettis outyielded all these in 6-year tests. The new variety combines tolerance to barley yellow dwarf virus (BYDV), yield, moderately high test weight, and high groat percentage. In height, Pettis compares with Andrew, but the straw is weaker. Pettis is adapted, it is thought, to southeastern South Dakota, eastern Nebraska, southern Iowa, Illinois and Indiana; and in Kansas, Missouri, Kentucky and West Virginia. Certified seed is being produced.

Barley

Arimar (C.I. 13626) is a six-row, spring barley originated at the Arizona AES from the cross California Mariout x Arivat. It is a feed barley, adapted to irrigated areas of Arizona and other areas of the southwest where the parent varieties are grown. Arimar is 3 to 5 inches shorter and 4 to 5 days earlier than Arivat. It is more resistant to lodging when grown under irrigation than either parent. It tillers well and resists shattering. Its awns are rough; its seeds are white. In 17 yield tests at four Arizona locations, from 1961-67, Arimar outyielded Arivat an average of 7 percent; its grain was one to two pounds heavier.

Breeder seed is being maintained by the Arizona Experiment Station. Foundation seed is available through Arizona Crop Improvement Association, University of Arizona, Tucson 85721.

Briggs (UCD 27), (C.I. 13682) a selection from the first backcross of California Mariout ² x Arivat, is a short, stiff-strawed, early, 6-row barley that is very similar to Arivat. Similarities include earliness, foliage color, kernel size, moderate susceptibility to mildew and tolerance to scald. Differences include 2-3 inches less height for Briggs, slightly stiffer straw, wider adaptation and higher yields. The Sacramento Valley appears to be the major area of production of Briggs; it could compete with Newmar for a place in the San Joaquin Valley. The California Station, originator, has a seed production program underway.

Cass (C.I. 13735) is a winter barley with malting possibilities still being evaluated. It was developed by Michigan AES, where its area of adaptation is described as Cass and Kalamazoo Counties and southwestern Michigan. The new variety is not considered superior in either winterhardiness or lodging. It was released because of its malting potential.

The heads are lax, of variable length; with long rough awns. Glume nerves are light red; the aleurone is white mixed with blue.

Barley (cont.)

C.M. 67, a product of the California AES, is described as a white seed "yellow dwarf-resistant California Mariout." There is indication the new variety may have some tolerance to barley scald. In California, C.M.67 is recommended in all areas where California Mariout has been successfully grown and also in areas where its resistance to yellow dwarf would offset the higher yield potential of Numar and Briggs. Late plantings for grain and early plantings for winter grazing are other special uses recommended. Certified seed will be available in 1970.

Florida 102 (C.I. 12254) is an early, six-rowed bearded variety developed by the Florida AES in cooperation with USDA. Resistance to spot blotch, leaf rust and mildew are features. Significantly, the Florida station cautions growers to recognize that temperatures and humidity favor a range of barley diseases making it a more hazardous crop than oats or rye.

Presently Ga-Jet is the only variety grown commercially in the State. By comparison Florida 102 matures some 2 weeks earlier and has excelled in yields of both grain and forage. Locally, earliness is credited for part of the difference. Hardiness of the new variety is considered adequate for northern Florida and adjacent coastal plains of both Georgia and Florida.

Foundation seed is available.

Hanover (C.I. 13197) is an awnleted winter barley developed at Virginia AES from the cross (Cebada Capa x Wong) x Awnleted Hudson. In comparison with its Wong parent, Hanover has been 5 to 10 percent more productive, about 6 inches shorter and slightly earlier but not quite as winterhardy, and a little lower in test weight. The new variety is recommended for the Coastal Plains and Piedmont sections of Virginia. Foundation seed is available.

Barley (cont.)

Hembar, our first commercial hybrid small grain, is the product of a new male sterility technique developed by Dr. Robert T. Ramage of Arizona AES and USDA. Advantages of the new method are sharp reductions in seed losses due to incomplete fertility restoration, and the possibility of its application to other important crops. Under Arizona conditions hybridization ranged from 30-80 percent of the seed set.

Hembar is a feed barley, suited to irrigated areas at lower elevations in Arizona. There it has outyielded Arivat, its male parent, 15 to 20 percent. Hembar is six-rowed, matures about 4 days earlier than Arivat and stands an inch taller.

Breeder seed of the maternal line 63-j-18-17 is being maintained by the Arizona Experiment Station.

Ione (C.I. 13198), cooperatively developed by Oregon AES and USDA, is a mid-tall 6-row winter barley with white kernels of medium test weight and rough awns. Vigorous in early growth, it produces good soil coverage quickly. Ione is an early variety, maturing about the same time as Hudson.

It is resistant to barley scald caused by Rhynchosporium secalis. No information is available on its resistance to loose smut.

Foundation seed is available.

Keowee (C.I. 11369) is a stiff strawed, medium early winter barley developed by the South Carolina AES, that is adapted to the Carolinas, Georgia and most of the Southeast. Yield and test weight are features of this F₆ selection from a Davie x Hudson bulk. In 5-year trials at the Simpson Station Field near Clemson, Keowee averaged 84.6 bushels per acre, some 30 percent more than the best competitors. Test weights have consistently been in the 47-48 pound range even when other varieties fell substantially lower. The new variety is similar in adaptation to Ga-Jet, Colonial 2, Wade, Early Marconee, and Miller. Registered seed is available from the South Carolina Foundation Seed Association at Clemson.

Barley (cont.)

Lakeland (C.I. 13734) is a feed-type winter barley developed by the Michigan AES, that is especially adapted to the northern fringe of Michigan's barley growing area. In five years of field trials there it has averaged 82 bushels, outyielding Hudson by 12 bushels. In southern Michigan, where winterhardiness is not as critical to good yields, Hudson was the higher yielder. Lakeland excelled Hudson in lodging resistance but was slightly inferior in test weight. Both foundation and certified seed are available.

McNair 601 (C.I. 13644) is a 6-rowed, awnleted winter barley developed cooperatively by the North and South Carolina Experiment Stations and McNair Seed Company. In both States it has outyielded Colonial 2, Davie and Wade. In limited tests it has demonstrated its adaptation to much of the Southeastern area. McNair 601 has good resistance to powdery mildew, some resistance to leaf rust and to scald, but poor resistance to loose smut. It is slightly earlier than the varieties mentioned above, equal to Wade in lodging resistance and superior to Davie and Colonial 2.

Breeder seed will be maintained by the McNair Seed Company, Lardinburg, North Carolina 28352.

Newmar (UCD 1520) (C.I. 13683) is a short, stiff strawed, early maturing, 6-rowed variety originated by the California AES. A selection from the third backcross of California Mariout⁴ x Arivat, it appears to combine adaptation features of both parents. Newmar has equalled or excelled the better parent at test locations throughout the Sacramento, San Joaquin and Imperial Valleys. Statewide, it appears to be a likely competitor with California Mariout.

In comparison, Newmar is about 2 days later and 2 inches taller than California Mariout. Its kernel size is equal or slightly smaller. Both varieties are susceptible to scald and moderately susceptible to mildew. Compared with Arivat, Newmar is 3 days earlier, and 2-3 inches shorter with equally strong straw.

The California AES has a seed increase program underway.

Barley (cont.)

Steveland (C.I. 13100) is a 6-row, rough awned, blue kernel feed barley jointly released by the Idaho and Oregon Experiment Stations and USDA. Its short straw, earliness and high yield potential suit it well to irrigated production. Because of low test weight, it is not recommended in low rainfall areas without irrigation. Under irrigation at Aberdeen and Twin Falls, Steveland outyielded Trebi by more than 5 bushels. At Aberdeen, it outyielded Trebi, Bonneville and Gem from 6-8 bushels per acre in the order named. In threshability, Steveland is similar to Trebi. It is about the same in maturity as Gem and 5-12 days earlier than Trebi and Bonneville. Steveland is not as stiff strawed as Bonneville. But because it is shorter, it compares with Bonneville in lodging resistance and excels Gem and Trebi.

Foundation, registered and certified seed are available.

Cotton

Acala 3080 is a plains-type cotton characterized by high resistance to bacterial wilt and tolerance of Verticillium and fusarium wilt. Developed cooperatively by New Mexico AES and USDA, it is adapted to the plains counties of New Mexico and adjoining plains areas of Texas. Acala 3080 has produced much higher lint yields than Acala 1517 BR-2 in tests on fields severely infested with Verticillium.

These varieties are similar in fiber properties and yarn strength. Acala 3080 is the more storm resistant since the locks are more firmly attached to the boll and less inclined to "string out." The new variety is better suited to stripper harvesting than with a spindle picker.

Limited quantities of seed are available to breeders and foundation seed growers from the Agronomy Department of New Mexico State University, Las Cruces 88001.

Cotton (cont.)

Atlas 67 was released to seed producers in 1968 by the Georgia Coastal Plain AES. It is the product of nine years of breeding aimed at yield and spinning quality, especially fiber strength. The new variety is reported to meet these needs well under Georgia conditions. It has exhibited impressive fiber and yarn strength, yields equal to or above popular commercial varieties despite some tendency toward lower lint percentages, boll size of 60-70 per pound and earliness comparable to prevailing varieties. Atlas is classed locally as "tolerant" to fusarium wilt, not highly resistant. Its staple length falls quite uniformly in the 1-1/32 - 1-1/16 range in Georgia. Its micronaire ranges from 3.5 to 5.0, depending on location and seasonal conditions.

Coker 413-68 was developed by Coker's Pedigreed Seed Company, Hartsville, S.C. from a cross involving Coker 100-Wilt and Coker-Wilds. Release of this strain to farmers in 1968 followed 24 generations of reselection and testing. Coker 413-68 is described as a variety with high yield potential and excellent fiber quality. It possesses the length, length uniformity, strength and micronaire, essential to efficient mill performance. Its fiber data are: length, 1-1/16 - 1-1/8"; strength, 85,000-90,000 p.s.i.; and yarn strength in excess of that projected from fiber strength evaluation.

Yield, gin turn-out, adaptation to machine harvesting and other characteristics have been satisfactory in the southeastern, Mississippi Valley, southwestern and western areas.

MO-DEL (Mo. 61-470F) was produced by the Missouri AES Delta Research Center, with assistance from USDA. It is a medium early variety that features good yields and superior fiber qualities. Its excellent seedling vigor is noteworthy in areas where stand establishment is a problem. Other advantages credited to MO-DEL are resistance to bacterial blight and to the fusarium wilt-root knot nematode complex, together with tolerance to verticillium wilt. Because of its off-ground fruiting, stiff stalk and storm resistance but easy picking characteristics, the new variety is well suited to machine harvesting.

MO-DEL was developed from a series of complex crosses involving Pandora, Early Fluff, Cook-Empire-Tanguis (G. barbadense), Acala-Hopi, Acala x Trispecies 108 (G. hirsutum, G. arboreum, G. Thurberi), Auburn 56 and Auburn 56-5714. The last named is a bacterial blight resistant derivative from Auburn 56.

Seed supplies are being increased.

Cotton (cont.)

Tamucot 788 was developed by Texas A&M University, South Plains Research and Extension Center at Lubbock, Texas. Tested since 1965, indications are it will provide producers in the High Rolling Plains a well-adapted variety for once-over stripper harvesting, producing fiber of excellent spinning characteristics. The new variety is medium early, stormproof and upright with short fruiting branches and light pubescence. Bolls and seed are medium in size with good seed cover. Tamucot has equalled or outyielded most varieties in its tests. Its fiber was longer and much stronger than that of other stormproof varieties--consistently 1-1/32 and better with breaking strengths of 90,000 p.s.i. and upward. Foundation seed was first distributed this year.

TH 149 is a tri-species cross (*Gossypium arboreum* x *G. thurberi* x *G. hirsutum*) backcrossed seven times to adapted upland (*G. hirsutum*) varieties, and selected for improved fiber quality. It was developed cooperatively by the North Carolina AES and USDA. In North Carolina and the Southeastern Regional tests the combination of improved fiber properties, particularly strength, with acceptable yields characterized the new variety. Bolls and seed are large, the lint percentage is relatively low. Staple length of TH 149 is slightly longer than that of check varieties, its fineness (micronaire) slightly less. Fusarium wilt reaction appears to be intermediate, which is considered satisfactory for all but the most heavily infested soils of the region. The plant grows vigorously from the seedling stage, reaching above-average height at maturity. The open bolls showed good storm resistance and suitability to machine harvesting. Limited supplies of seed will be available in 1969.

Stoneville 508, a product of Stoneville Pedigreed Seed Co., Stoneville, Mississippi, originated with a 1953 single plant selection from Stoneville 2B. Its features included high lint percentage, long strong fiber, and good production potential, but these coupled with a large plant (long internodes) and a long maturation period. Reselection emphasized compactness of plant and more rapid fruiting without loss of desirable fiber and yield characteristics.

Compared with Stoneville 213 the new variety is taller and broader yet open to light and aeration. Its bolls are larger (65-75 per pound compared with 70-80 for Stoneville 213), in storm resistance it exceeds most mid-south varieties. The lint percentage of 508 is about 1.5% less than 213. The fiber is longer (running 1-3/32 - 1-1/8 inches in the Delta); micronaire values are 3.8 - 4.2 compared to 4.5 - 4.9 for Stoneville 213. In fiber strength Stoneville 508 excels 213 by 5 - 10% and in 22's yarn strength by about 15%.

Soybeans

Beeson is a soybean variety developed by the Purdue AES and USDA, and released this year by the Indiana, Illinois, Missouri, Nebraska and Ohio stations. It originated from the cross (Blackhawk x Harosoy) x Kent. Beeson is about 6 days later than Harosoy 63 and 3 days later than Amsoy. Beeson is superior in yield to Harosoy 63 and equal to Amsoy. It is resistant to phytophthora root rot, and will be superior to Amsoy where the disease is present. The plants have a spreading leaf canopy, and are moderately resistant to lodging. The seeds are relatively large and shiny-yellow with imperfect black hila color. Beeson is equal to Harosoy 63 in chemical composition of the seed. Seed supplies are being increased in 1968 by foundation agencies.

This variety was named for the late Keller E. Beeson, longtime Indiana Extension Agronomist, who retired in 1961.

Calland is a soybean variety developed by the Purdue AES and USDA, and released this year also by the Illinois, Iowa, Kansas, Missouri, Nebraska and Ohio stations. It originated from the cross (Blackhawk x Harosoy) x Kent. Calland is about 4 days later in maturity than Shelby and two days later than Wayne. The chief advantage of Calland is its somewhat higher yield than Wayne, distinctly higher yield than Shelby, resistance to Phytophthora root rot and moderate resistance to downy mildew. Calland has not shown iron deficiency in high pH soils. The plants have a spreading leaf canopy and are moderately resistant to lodging. The seeds are relatively large and dull yellow with black hila. The protein and oil content of Calland is not different from Wayne. Seed supplies are being increased in 1968 by foundation agencies.

Clay is a selection from the cross Renville x Capital, developed by the Minnesota AES, that is expected to find its greatest use in northeastern South Dakota and in the Red River Valley of South Dakota and Minnesota.

In maturity the new variety ranks between Merit and Flambeau. Clay is shorter than either, stands better, and has outyielded both in combine-harvested tests. Clay soybeans have dense dark green foliage, purple flowers and grey pubescence. The seed is medium in size, shiny and yellow with colorless hila. The oil content is high.

Soybeans (cont.)

Cutler is a soybean variety developed by the Purdue AES and USDA, and released also by the Illinois, Kansas, Maryland, Nebraska, Ohio and Oklahoma stations. It originated from the cross (Lincoln x Ogden) x Clark. Cutler matures about 3 days later than Clark 63 and about 5 days earlier than Kent. It is very similar to Clark 63 and Kent in plant growth-type, seed appearance, and chemical composition. The chief advantage of Cutler is its distinctly higher yield than Clark and its slight superiority over Kent, and its earlier maturity. Seed supplies are being increased in 1968 by foundation agencies.

Lee 68 was released by Arkansas AES where it was developed in cooperation with USDA. Its major difference from Lee is the new variety's high resistance to phytophthora root rot. The two varieties are similar in height, maturity, shattering, resistance to foliar diseases; and in seed weight, quality and composition.

Limited supplies of foundation seed were distributed in 1968.

Safflower

Dart (Al2295), a variety cooperatively developed by Arizona AES and USDA, has demonstrated yield advantages in certain Arizona areas, notably the Salt River Valley, but not in others. At Mesa, for example, Dart was 1.6 and 4.8 units higher in percent oil than Frio and Gila, respectively, with seed yields 200 and 500 pounds greater. In oil yields, Dart exceeded Frio by 100 pounds and Gila by 300 pounds. At Yuma and Marana, Dart showed no advantage.

Dart is tolerant to cold in seedling and early growth stages, more uniform than Frio in plant and seed type. It is as tall as Frio, taller than Gila, yet more resistant to lodging than either. Dart is tolerant to the two races of phytophthora root rot found in Arizona. During an occurrence of Verticillium wilt, Dart exhibited little more resistance than Frio.

Seed distribution is handled by the Arizona Crop Improvement Association, c/o Department of Agronomy, University of Arizona, Tucson 85721.

Safflower (cont.)

Rio is a pure line variety developed by the Arizona AES cooperatively with USDA that has made an excellent all-round performance record since its selection in 1962. Its pedigree is somewhat clouded because the individual parent plant apparently was an outcross. It came from open pollinated seed of the line A104, now named Frio.

In tests under the variety of growing conditions found in Arizona, Rio has shown more frost tolerance than any other commercial variety, equal or higher total yields of seed and oil, larger seed, and equal protein percentages. It is similar to Dart and Frio in height, yellow flower color, and general plant characteristics. Head size is similar to Gila, smaller than Dart, more uniform than Frio. It has grey, striped-hull seed. In maturity, Rio is about equal to Frio, later than Gila and earlier than Dart. Rio is high in self-fertility like Gila; adapted to a range of growing conditions, and similar to Frio in disease reaction.

Foundation seed is available from the Arizona Crop Improvement Association.

Flax

Nored is a medium to late maturing variety regarded as a replacement for Redwood and B-5128. It was cooperatively developed by the Minnesota AES and USDA with North Dakota, South Dakota and Wisconsin cooperating in the release. Nored has outyielded other recommended varieties when sown early. It is rated outstanding in pasmo-tolerance, resistant to rust and wilt, with good lodging resistance and high oil content. It is of medium height, with blue flowers and brown seed of average size.

Crambe

Prophet is a Purdue selection from PI 247310 consisting of the 0.1 percent of the largest and heaviest seed in a 9585 pound lot of the parent stock. Separation was achieved by screening followed by three passages over a gravity table. In Indiana tests last year Prophet equalled other tested varieties in terms of seedling vigor and overall appearance, but it tended to be slightly later. It outyielded PI 247310 slightly in the southern Indiana test and by approximately 200 pounds at Lafayette.

Popcorn

P-216 is an early yellow hybrid popcorn released by Purdue AES. It has been tested since 1962 in Illinois, Ohio and Nebraska as well as Indiana. Developers say the new hybrid is well adapted to northern Indiana where it will replace P-202 entirely and largely replace P-203. Its advantages are excellent popping expansion and taste, superior standing ability with few tillers, and large ears. Yields are fair. P-216 is regarded as a good home garden popcorn. Seed is available from the Ag Alumni Seed Improvement Association in West Lafayette, Indiana.

Broomcorn

Deer broomcorn was selected at the Illinois AES from the hybrid Rennels Dwarf No. 11 x Illinois No. 1. A feature of the new variety is its resistance to anthracnose stalk rot. Though Deer is slightly shorter than Rennels Dwarf No. 11, the two varieties are similar in maturity and appearance. The plant color is tan. The glumes are tan to sienna and nearly cover the brown kernels. The brush fibers are as long or longer than Rennels Dwarf No. 11 and are exerted to about the same degree. The yield of good brush from Deer has been greater than from other available varieties in two years of comparative testing in Illinois and Oklahoma. The brush quality has been as good or superior to other popular varieties. Certified seed is available.

Broomcorn (cont.)

Plains 1 and Plains 2 are sister selections from the cross Rennells 11 x Scarborough 7, jointly released by the Illinois and New Mexico stations. In New Mexico both demonstrated high resistance to anthracnose stalk rot under natural epidemic conditions. Under disease-free conditions, they closely approximate Rennells in yield. The new varieties are medium in height and resistant to lodging. Both offer desirable brush characteristics. Seed will be available in 1969.

Field Beans

Royal Red, the first kidney bean with near immunity to curly top virus, was released by USDA and Washington AES. The new variety also resists common bean mosaic virus and is adapted to the Northwest, where the two diseases have severely limited red kidney bean production.

Royal Red greatly outyielded all commercial varieties of red kidney beans where curly top was present; in absence of the disease it equalled or exceeded the best.

Royal Red has tall, erect bushes and long, straight pods located high on the bush. Its pods and leaves are off the ground and better ventilated than those of more viny varieties, making it less subject to infection by sclerotinia wilt and pod rot.

Seed of the new variety is slightly lighter in color, and more uniform in size and shape than those of other red kidney varieties. Royal Red matures about 90 days from planting, approximately the same as California Dark Red Kidney. It is satisfactory for both canning and dry packaging.

Limited quantities of seed are available to certified seed growers. Requests should be sent to the Washington State Crop Improvement Association, Post Office Box 617, Yakima, Washington 98901.

Sugarcane

Developed and released cooperatively by the Florida AES, Florida Sugarcane League, Inc., and USDA are three early maturing varieties:

C.P. 56-63 is a low-fiber, non-flowering variety recommended for early harvest. In 10 tests it surpassed Cl. 41-223 by 20 percent in indicated sugar yields per ton of cane and by 19 percent per acre. These varieties were equal in fiber content and juice extraction. Parentage of C.P. 56-63 is Cl. 47-83 x C.P. 36-105.

C.P. 57-614 is a high-sucrose, very high fiber variety that is tolerant of low temperatures in its area of origin. Though poorer in milling quality than C.P. 50-28, it excelled C.P. 50-28 by 11 percent in indicated sugar yields per ton of cane and by 20 percent per acre. Parentage of this new variety is Cl. 47-143 x C.P. 53-17

C.P. 63-588 is a low fiber, high tonnage variety that grows rapidly in early spring but does not flower early. In 10 tests C.P. 63-588 produced 9 percent more sugar per ton of cane and 34 percent more per acre than Cl. 41-223. The stalk matures in its upper portions more uniformly than other varieties, producing higher quality juice when topped at a single level. Parentage of C.P. 63-588 is Cl. 54-191 x C.P. 53-17.

Seedcane is distributed by Florida Sugarcane League, P.O. Box 1148, Clewiston, Florida 33440.

C.P. 67-500 is a disease-resistant high yielding sugarcane variety in the southern Mississippi and Alabama area, developed by the Mississippi AES and USDA. A selection from the cross C.P. 56-11 x C.P. 51-30, it is highly resistant to Strain B sugarcane mosaic virus and to lodging. The new variety equals C.P. 36-111 in tons of stalks and sirup per acre, in ease of processing and sirup quality.

Seedcane will be distributed through Mississippi Foundation Seed Service, Mississippi Experiment Station, State College 39762.

Sorghum (sirup)

Brandes is a sweet (sirup) sorghum developed cooperatively by the Mississippi AES and USDA. It features unusual resistance to lodging, far better than Wiley--the most widely grown variety.

Brandes is slightly less productive in tons of stalks per acre, but is about equal to Wiley in sirup quality and yield per ton of stalks. Both mature in 120 to 140 days. Brandes is adapted to Mississippi and other areas with similar climate.

The new variety is resistant to leaf anthracnose and other major sorghum diseases. Brandes is readily injured by cotton insecticides. Hence, it is not recommended in areas where airplane insecticide dusting of cotton is practiced.

Seed may be obtained from the Mississippi Foundation Seed Service, Mississippi Agricultural Experiment Station, State College 39762.

Alfalfa

A-24, a product of the Embro Seed Co., stems from Socheville, Alfa, DuPuits and Buffalo parentage. It is adapted to hay producing areas of central United States. Flower color is variegated with lavender predominant, blooming is early as DuPuits. Growth habit is upright like DuPuits, taller than Vernal or Ranger. Certified seed is expected this year.

Florida 66 is a product of the Florida AES. It traces to a germ plasm pool of 100 varieties and introductions assembled in 1950. The new variety is the result of six cycles of selection for vigor and persistence. Tested only in the northern half of Florida thus far, Florida 66 is recommended there for hay, silage and green chop production. Plants are non-dormant and erect. Flowers are blue to purple. The Florida station is maintaining breeder seed. Certified seed will be available in September 1968.

Alfalfa (cont.)

Iroquois is a Narragansett-type alfalfa adapted to the northeastern States, developed at the New York (Cornell) AES. It is expected to replace Narragansett, Vernal and some Cayuga acreage. Essentially similar to Narragansett in foliage characteristics and growth habit, Iroquois is a darker-green and slightly more upright. The two varieties are similar in tolerance of leaf diseases, winter dormancy, regrowth rate and flower color.

As to differences, Iroquois has bacterial wilt resistance; Narragansett does not. The new variety has outyielded Narragansett by 5 percent during the first two harvest years. It is suitable for well-drained or moderately drained soils, has high seedling vigor and is a better seed producer than Narragansett.

Iroquios was produced through three generations of back-crossing and selection for wilt resistance and desirable agronomic characteristics. Vernal was the non-recurrent wilt-resistant parent and Narragansett, the recurrent parent.

Seed is available but in limited quantity. Adequate supplies are expected in 1968.

Mesilla is a synthetic tracing to New Mexico Common and Turkestan parentage, developed by New Mexico AES. Selection was directed to aphid and disease resistance and to forage yields. Area of known adaptation is presently limited to the State for lack of outside tests. Mesilla is resistant to spotted alfalfa aphid, tolerant to green pea aphid and to bacterial and Fusarium wilt. The plant is more dormant than Zia, considerably moreso than Moapa. Flower color is light to dark purple. The New Mexico Experiment Station will maintain breeder seed. Certified seed should be available in 1969.

Unico, developed by the Arizona AES in cooperation with ARS and the California and Nevada AES, shares two of its four parent clones with the variety Sonora (see New Crop Varieties No. 5) and two with Mesa-Sirsa (see New Crop Varieties No. 8). Like Mesa-Sirsa it is a non-dormant variety, more tolerant to downy mildew and the spotted alfalfa aphid than Sonora or Moapa. Plants stand uniformly upright, flowers are purple with no variegation. Unico is adapted to the central valley of California and the lower desert valleys of the southwest, primarily for hay production. The Arizona Station will maintain breeder seed. First certified seed harvest is anticipated in 1968.

Alfalfa (cont.)

WL 214, a Waterman-Loomis product is a synthetic whose parentage includes Atlantic, Ranger, Neb. 67-2813, Grimm and several Plant Introductions. Selection was directed to resistance to spotted alfalfa aphid, bacterial and fusarium wilt, mildew and pea aphids, and to seed yields. The new variety is adapted to hay or green-chop production in the upper Midwest. The growth habit is upright, more uniform than Vernal but less so than the Flemish varieties. Flower color is some 98 percent purple, the remainder white. Certified seed will be available in 1968 or 1969.

WL 210, developed by Waterman-Loomis Co., is a synthetic of Vernal-Narragansett-Culver parentage selected for its dark green color, forage and seed yields. It is adapted to the same area as Vernal and WL 202 for hay, silage or green chop. Flower color is a mixture of dark to medium purple, variegated, white and yellow. Growth habit is similar to Vernal, but slightly taller. Foliage color is darker than for older standard varieties. WL 210 scored 3.8 in spotted aphid resistance compared with 2.0 for Lahontan and 4.8 for Saranac where 1= no damage, 5= susceptible. Certified seed will be available either in 1968 or 1969.

WL 303 is a synthetic produced by Waterman-Loomis Co. of tested clones from Atlantic and Vernal. This variety has been tested from Nebraska to Maryland and northward to St. Paul with generally good results. It is used for hay or green chop. Flower color is a mixture of purples, blue-variegated, purple-tinged white, white, yellow and cream. WL 303 is slightly more dormant than Flamande. Its early spring growth is of a distinctly viney type. Certified seed will be available in 1968 or 1969.

123 is a synthetic of Vernal parentage merchandised by Dekalb Agricultural Association, Inc. and intended for use in those areas where Vernal and similar winterhardy varieties are now used. Its growth habit is upright, of similar height to Ranger. 123 is susceptible to spotted alfalfa aphid. Flower colors are blue to purple with about 1 percent yellow. First certified seed is expected in 1968.

Alfalfa (cont.)

153, a Dekalb product, traces to Vernal, Ranger, Buffalo and Cody. Its region of adaptation overlaps the southern part of the Vernal area and extends southward through the Buffalo area. 153 is intended for short duration hay stands. Flower colors are blue to shades of purple, not variegated. In growth habit this variety compares with Cody, relatively tall. It is susceptible to spotted alfalfa sphid. Certified seed will be available this year.

Bermudagrass

Pee Dee 102 is a fine-stemmed bermudagrass suitable for fine lawns and golf greens, released by the Clemson University (S.C.) AES. The new grass is a mutation arising from an early planting of Tifgreen. In comparison with its parent the new grass offers darker green color, quicker coverage, added disease resistance, fewer seed heads, and less upright growth.

Pee Dee 102 is completely male-sterile, but is easily increased by sprigs. Sod is available. Application for propagating stock should be made to South Carolina Foundation Seed Association, Clemson, S.C.

Bromegrass

Fox is a synthetic variety developed at the Minnesota AES where it has demonstrated superior seedling vigor and resistance to leaf spot. In yield and maturity it compares with Lincoln. Foundation seed was made available this year to Minnesota seed growers and to foundation seed programs in other North Central States.

Orchardgrass

Palestine orchardgrass was released by the California AES where it has been under test since 1947. Its origin is a sample of seed collected near Dahlia, Palestine.

Test results indicate that Palestine is adapted to California's non-irrigated grazing lands from Shasta and Del Norte Counties in the north, southward to San Diego County. The new variety appears promising from elevations of 5000 feet down to sea level. It has been more easily established than hardinggrass or smilograss, is excellent on brush burns, and seems to overlap in adaptation to climate and soils harding (heavy soils) and Mission Veldtgrass (light soils).

Certified seed will be available in 1970.

Pennmead is a high-yielding, leafy orchardgrass recently released by the Pennsylvania State University. Midway in maturity between Potomac and Pennlate, it produces substantially more aftermath than other adapted varieties.

In a 1967 Pennsylvania trial, Pennmead yielded nearly 6.5 tons of dry matter compared to 6.2 for Potomac and 5.9 tons for Pennlate.

A good supply of certified seed is available.

Red Fescue

Jamestown was selected in 1945 from an abandoned putting green by Rhode Island AES personnel. It is dark green, of fine texture and upright in growing habit. In comparative tests begun in 1960, Jamestown appeared more disease resistant; showed excellent heat, drought and cold tolerance; and compared in shade tolerance to five widely grown varieties. It has shown high density and good uniformity at cutting heights from 1/4 to 1½ inches. Its mowing quality is excellent. Jamestown is recommended in Rhode Island for general turf use comparable to other red fescues. Ample seed supplies are not expected until the 1970 harvest.

Wheatgrass

Tegmar is a long-lived, late-maturing, dwarf intermediate wheatgrass, selected by SCS-USDA Plant Materials Center, Pullman, Washington from PI-109219, a 1934 collection in Turkey. It was released by the Idaho AES at Tetonia and USDA. Tegmar forms a dense sod. Its fine, mostly smooth and erect stems are less than half the length of other intermediate wheatgrass varieties. Leaves are numerous, narrow, mostly basal and smooth, light green to blue-green in color. Tegmar equals other wheatgrasses in seedling emergence; begins sodding earlier, makes a dense turf and is more drought tolerant. It is well suited on good soils where annual precipitation is 13 inches or more.

Tegmar is less productive than the more robust varieties of intermediate and pubescent wheatgrass. Its primary use is erosion control on highway rights of way, reservoir berms, waterways, diversions, ski slopes and recreation areas. Breeders seed and foundation seed are being maintained at the SCS Plant Materials Center, Aberdeen, Idaho.

